UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,323	12/23/2004	Hans Loibner	4518-0107PUS1	9319

2292 7590 07/24/2008
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
NATARAJAN, MEERA	
ART UNIT	PAPER NUMBER
1643	

NOTIFICATION DATE	DELIVERY MODE
07/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/519,323	LOIBNER ET AL.	
	Examiner	Art Unit	
	MEERA NATARAJAN	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/25/2008 and 05/12/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-16,19-21 and 27-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-16,19-21,27,28,31-34 and 44-47* is/are allowed.

6)☒ Claim(s) *29,30,35-41 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendments in the reply filed on 02/25/2008 is acknowledged and entered into the record.

2. Accordingly Claims 2-16, 19-21, 27-48 are pending and will be examined on the merits.

New Grounds of Rejection

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 29, 30, 35, 42, 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. Claims 29, 30, 35, 42, 43 are rejected under 35 U.S.C. § 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention, because the specification does not provide evidence that the claimed biological materials are (1) known and readily available to the public; (2) reproducible from the written description.

6. It is unclear if the antibodies ABL364 and IGN311 were deposited with ATCC and are publicly available. Therefore, a suitable deposit for patent purposes is suggested.

Without a publicly available deposit of the above antibodies, one of ordinary skill in the art could not be assured of the ability to practice the invention as claimed.

7. The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention and failing to provide an enabling disclosure without complete evidence either that the claimed biological materials are known and readily available to the public or complete evidence of the deposit of the biological materials.

8. The specification lacks complete deposit information for the deposit of antibodies ABL364 and IGN311. It is not clear that the antibodies are known and publicly available or can be reproducibly isolated from nature without undue experimentation. Because one of ordinary skill in the art could not be assured of the ability to practice the invention as claimed in the absence of the availability of the claimed antibodies, a suitable deposit of the antibodies, evidence of public availability of the claimed antibodies or evidence of the reproducibility without undue experimentation of the claimed antibodies, is required.

9. If the deposit is made under the provisions of the Budapest Treaty, filing of an affidavit or declaration by applicant or assignees or a statement by an attorney of record who has authority and control over the conditions of deposit over his or her signature and registration number stating that the deposit of antibodies ABL364 and IGN311 has been accepted by an International Depository Authority under the provisions of the Budapest Treaty and that all restrictions upon public access to the deposited material will be irrevocably removed upon the grant of a patent on this application. This requirement is necessary when deposits are made under the provisions of the Budapest

Treaty as the Treaty leaves this specific matter to the discretion of each State.

10. If the deposit is not made under the provisions of the Budapest Treaty, then in order to certify that the deposits comply with the criteria set forth in 37 CFR 1.801-1.809 regarding availability and permanency of deposits, assurance of compliance is required. Such assurance may be in the form of an affidavit or declaration by applicants or assignees or in the form of a statement by an attorney of record who has the authority and control over the conditions of deposit over his or her signature and registration number averring:

(a) during the pendency of this application, access to the deposits will be afforded to the Commissioner upon request:

(b) all restrictions upon the availability to the public of the deposited biological material will be irrevocably removed upon the granting of a patent on this application:

(c) the deposits will be maintained in a public depository for a period of at least thirty years from the date of deposit or for the enforceable life of the patent of or for a period of five years after the date of the most recent request for the furnishing of a sample of the deposited biological material, whichever is longest; and

(d) the deposits will be replaced if they should become nonviable or non-replicable.

11. Amendment of the specification to recite the date of deposit and the complete name and address of the depository is required. As an additional means for completing the record, applicant may submit a copy of the contract with the depository for deposit and maintenance of each deposit.

12. If a deposit is made after the effective filing date of the application for patent in the United States, a verified statement is required from a person in a position to corroborate that the biological material described in the specification as filed is the same

as that deposited in the depository, stating that the deposited material is identical to the biological material described in the specification and was in the applicant's possession at the time the application was filed.

13. Applicant's attention is directed to In re Lundak, 773 F.2d. 1216, 227 USPQ 90 (CAFC 1985) and 37 CFR 1.801-1.809 for further information concerning deposit practice.

14. Applicants state in the response filed 05/12/2008 that the ABL364 antibody was obtained from Novartis. However a search of the ABL364 antibody did not show that the ABL364 antibody could be purchased from Novartis. In addition the statement that "IGN311 has been widely described in the literature and is currently in clinical trials" is not sufficient to prove the antibody is publicly available or that the literature describes in detail how to specifically humanize (ie. CDR grafting etc.) the claimed antibody. Providing evidence of the public availability of these antibodies would obviate this rejection.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 36, 37, 39, 41, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Saleh et al. (J. of Clinical Oncology, Vol. 18, No. 11:2282-2292 June 2000) as

evidence by Basu et al. (Cancer Research Vol. 47:2531-2536, May 1987), Kumar et al. (Seminars in Oncology Vol. 28 pp.27-32, 2001) and the instant specification.

16. The claims are drawn to a method of stimulating a chemotherapeutic agent mediated lysis of tumor cells in a patient and a method of reducing or inhibiting tumor growth comprising administering to a cancer patient an antibody directed against the aberrant glycosylation of a tumor-associated antigen, Lewis Y, in combination with a chemotherapeutic agent in said patient.

17. Saleh et al. teach the administration of an antibody (BR96) directed against the tumor associated glycosylated antigen, Lewis-Y. The immunoconjugate BR96-Doxorubicin, which is the chimeric immunoglobulin (Ig)G1 anti-Lewis Y monoclonal antibody BR96 linked to the anthracycline doxorubicin (see p. 2282, right column, lines 9-12), to patients with metastatic colon or breast cancer who have failed no more than two prior chemotherapeutic regimens and their disease has not progressed while on doxorubicin-based therapy (defined as chemotherapeutic resistant (claim 4) and "minimal residual disease" (claim 5) in the specifications of the instant application p. 2 paragraph 6 and p. 4 paragraph 4). The colon and breast cancer patients in the study taught by Saleh et al. would inherently express a receptor from the family of the EGF receptors (Claim 16) because it is well known in the art that colon and breast cancer tissues express aberrant levels of EGF receptors (see Abstract, Kumar et al. Seminars in Oncology 2001). Basu et al. supports the inherency claim that all Lewis Y antibodies would bind to the EGF receptor because these antigens are intrinsic to the EGF receptors of all antigen-positive carcinoma cells. Basu et al. discloses "cell lines which

react with anti-Lewis Y antibodies express these antigens on their surface glycolipids and glycoproteins, including the EGF receptor (see Abstract and p.2532 right column last paragraph through p. 2533 left column). It would also be inherent that the cells of the cancer patient exhibit aberrant glycosylation (claim 9) as it is stated in the instant specification that "treatment of patients with tumor cells with aberrant glycosylation becomes possible, e.g. tumor cells having a receptor from the EGF receptor family, or Lewis y-positive tumor cells" (see p. 8, lines 13-16). Saleh et al. also disclose doses (claim 14) of the antibody at levels of 66-875 mg/m^2 (see Table 3, p. 2285). Therefore, the references teach all the limitations of the claims.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. Claim 38 and 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh et al. (J. of Clinical Oncology, Vol. 18, No. 11:2282-2292 June 2000) in view of Alsabti et al. (J. of Cancer Res. and Clin. Oncology, Vol. 95, pp.209-220, 1979) as evidence by Ravingerova et al. (Molecular and Cellular Biochemistry, Vol. 247, pp.127-138, May 2003).

21. The claim is drawn to a method as recited in Claim 36 wherein radiation is used to stimulate the dormant tumor cells and/or micrometastases.

22. Alsabti et al. teach methods of targeting malignant tumor cells that are in a dormant state but remain viable for relatively long periods without multiplying yet retain all their former and vigorous capacity to multiply. Alsabti et al. teach different stimuli to initiate tumor growth to allow for targeting and lysis by other agents administered during therapy. In addition Ravingerova et al. disclose MAPK can be activated by various cell stresses including radiation (see Abstract). Ravingerova et al. provides evidence for the inherency of MAPK activation after radiation stimulation.

23. It would have been *prima facie* to one of ordinary skill in the art at the time the claimed invention was made to use radiation therapy as a growth stimulus for the dormant tumor cells and/or micrometastases in the method taught by Saleh et al. in order to target all tumor cells. One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success by the teachings of Alsabti et al. in order to target and kill existing dormant tumor cells.

All previous rejections have been withdrawn in view of Applicants' amendments to the claims in the reply filed on 02/25/2008.

Conclusion

24. Claims 2-16, 19-21, 27, 28, 31-34, 44-47 are allowed.

25. Claims 29, 30, 35-43 and 48 are rejected.

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEERA NATARAJAN whose telephone number is (571)270-3058. The examiner can normally be reached on Monday-Thursday, 9:30AM-7:00PM, ALT. Friday. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MN
/Larry R. Helms/
Supervisory Patent Examiner, Art Unit 1643